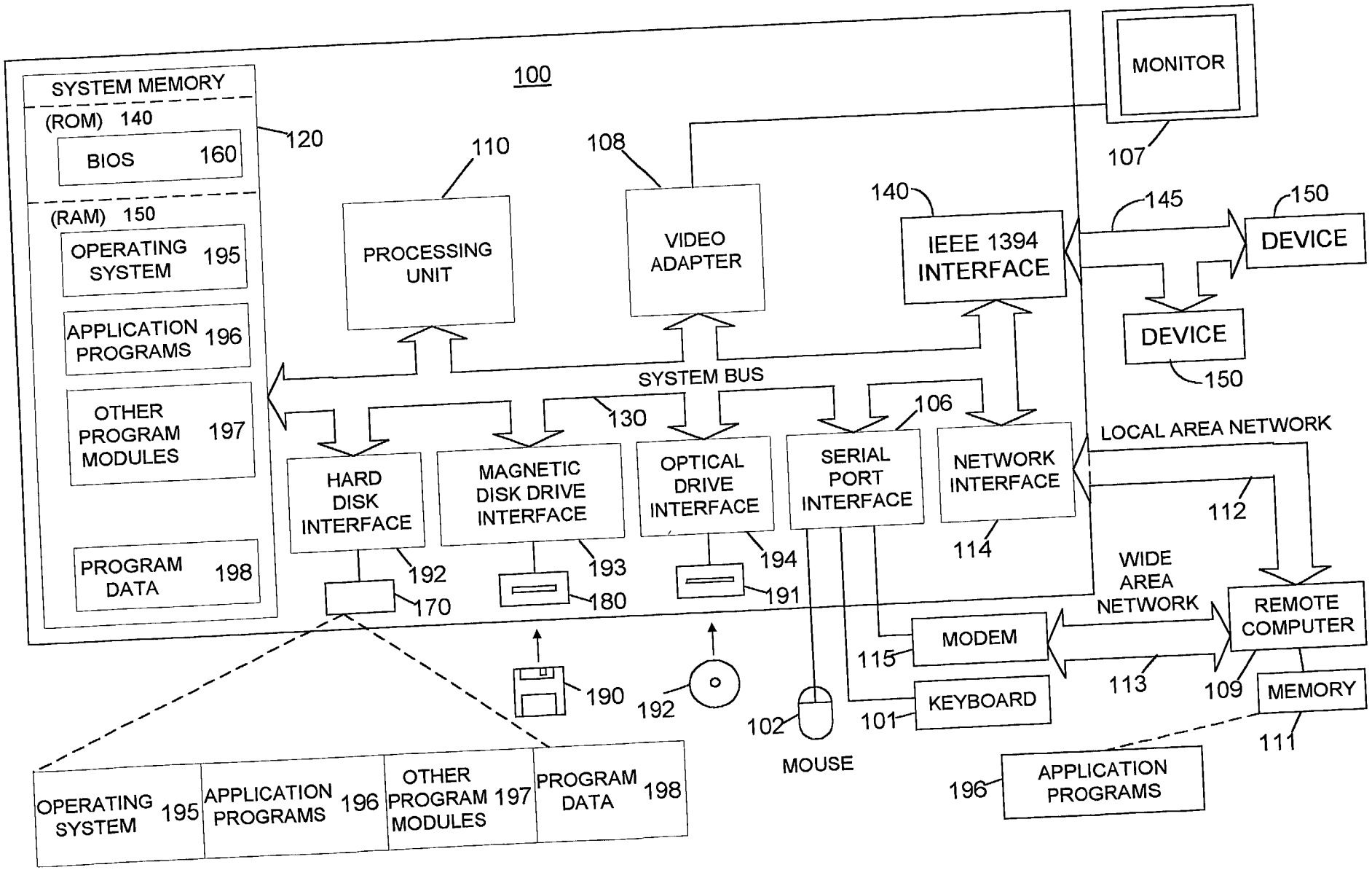
100
SYSTEM MEMORY
(ROM) 140
BIOS 160
120
(RAM) 150
OPERATING SYSTEM 195
APPLICATION PROGRAMS 196
OTHER PROGRAM MODULES 197
PROGRAM DATA 198
110
PROCESSING UNIT
108
VIDEO ADAPTER
MONITOR
107
140
IEEE 1394 INTERFACE
145
150
DEVICE
DEVICE
150
SYSTEM BUS
130
106
HARD DISK INTERFACE
MAGNETIC DISK DRIVE INTERFACE
OPTICAL DRIVE INTERFACE
SERIAL PORT INTERFACE
NETWORK INTERFACE
LOCAL AREA NETWORK
112
114
192
193
194
170
180
191
WIDE AREA NETWORK
REMOTE COMPUTER
MODEM
115
KEYBOARD
101
113
109
MEMORY
111
190
192
102
MOUSE
OPERATING SYSTEM 195
APPLICATION PROGRAMS 196
OTHER PROGRAM MODULES 197
PROGRAM DATA 198
196
APPLICATION PROGRAMS

FIG. 1

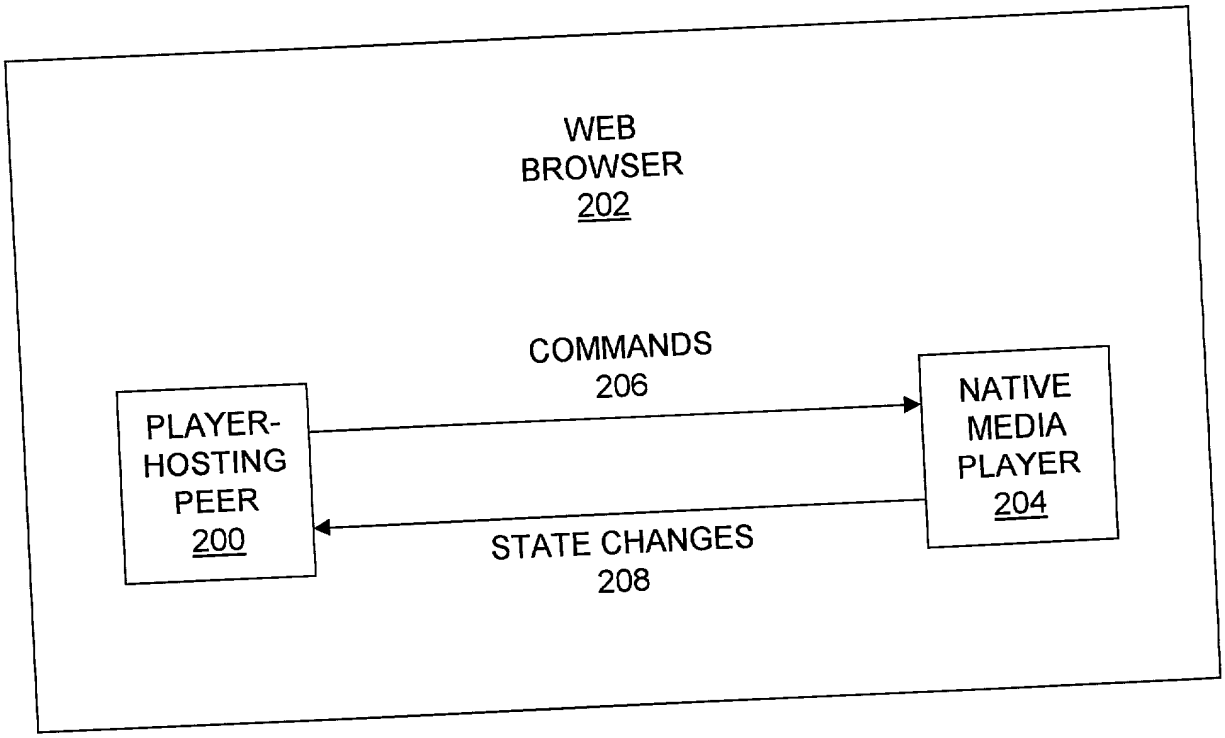
WEB
BROWSER
202
COMMANDS
206
PLAYER-
HOSTING
PEER
200
NATIVE
MEDIA
PLAYER
204
STATE CHANGES
208

FIGURE 2

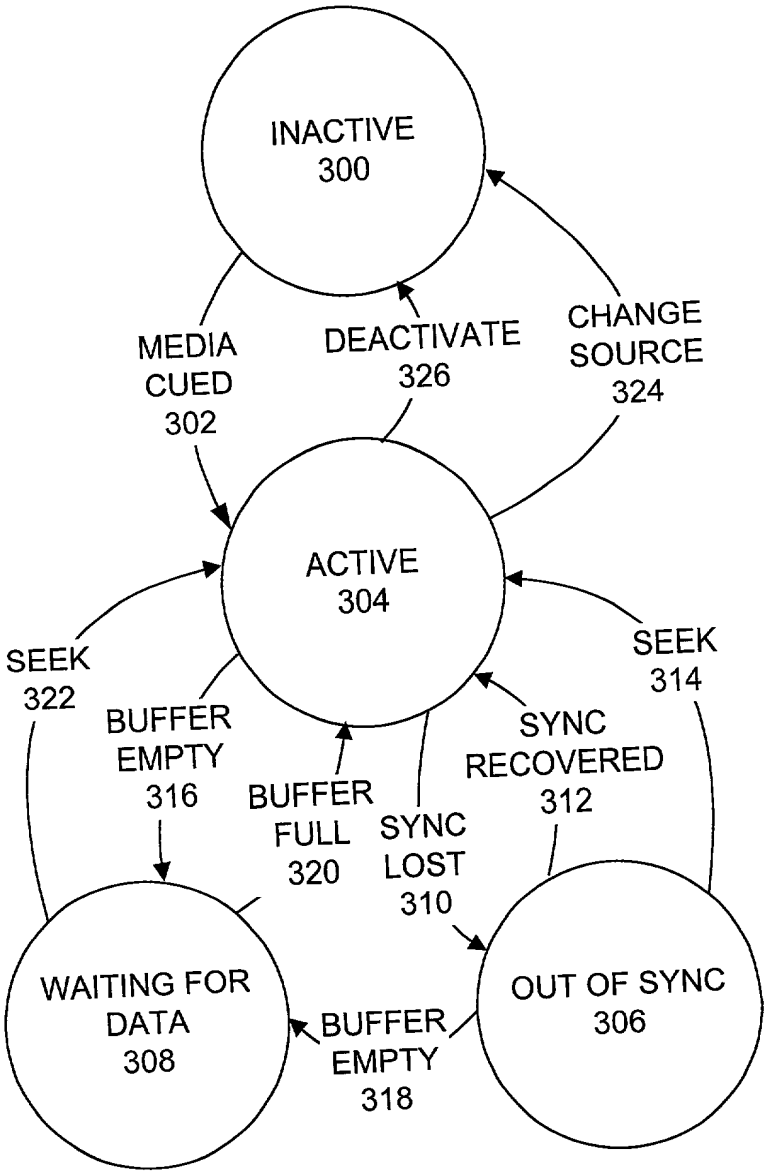
INACTIVE
300
MEDIA
CUED
302
DEACTIVATE
326
CHANGE
SOURCE
324
ACTIVE
304
SEEK
322
BUFFER
EMPTY
316
BUFFER
FULL
320
SYNC
LOST
310
SYNC
RECOVERED
312
SEEK
314
WAITING FOR
DATA
308
BUFFER
EMPTY
318
OUT OF SYNC
306

FIGURE 3

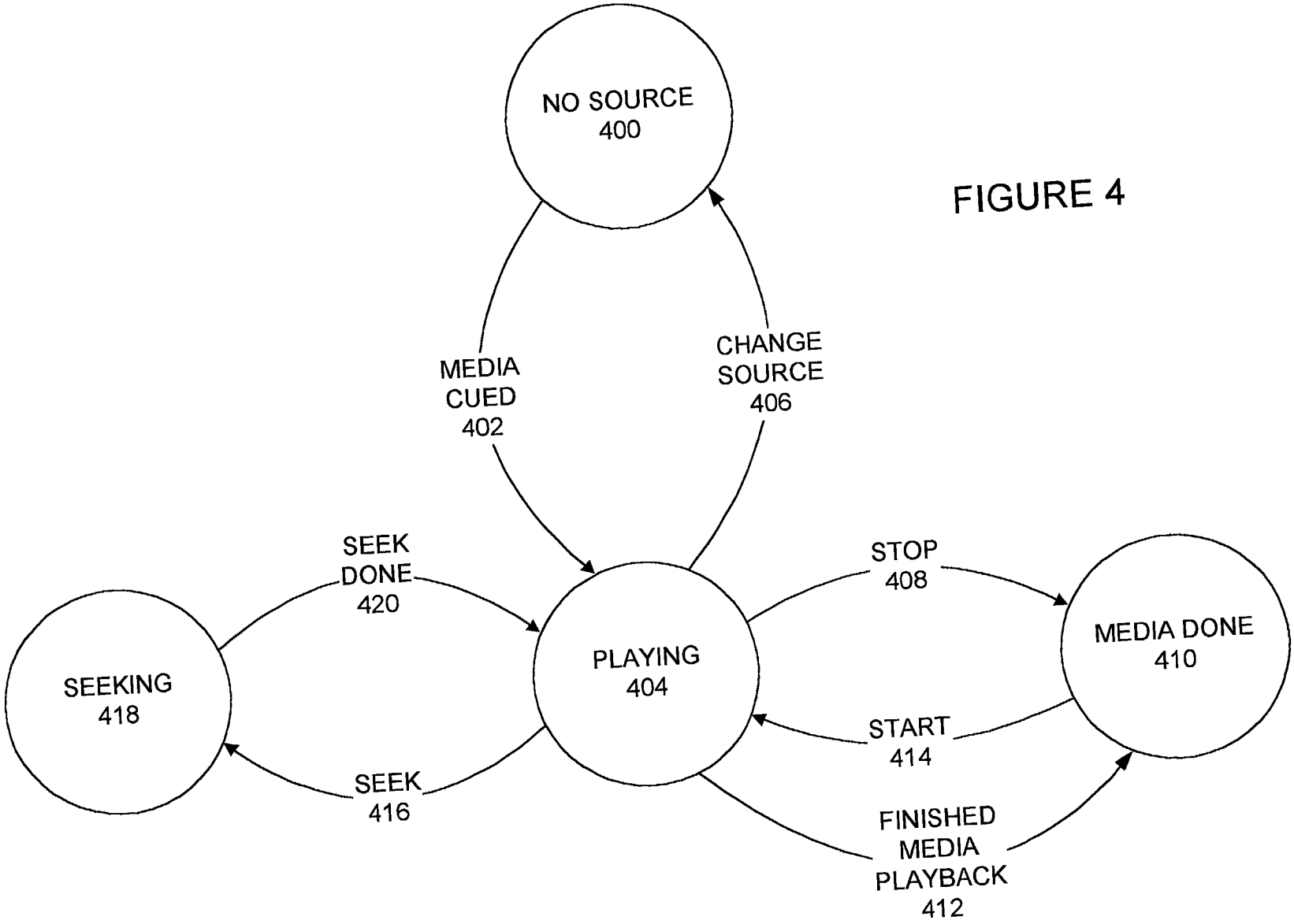
NO SOURCE
400
MEDIA
CUED
402
CHANGE
SOURCE
406
SEEK
DONE
420
STOP
408
SEEKING
418
PLAYING
404
MEDIA DONE
410
START
414
SEEK
416
FINISHED
MEDIA
PLAYBACK
412

FIGURE 4

Player Peer State	Player State
Inactive	No source
Active	Playing, Seeking, Media Done
Waiting for download	Playing
Out of sync	Playing

Figure 5

Command or Event	Initiated by	Comment
Media cued	Player	Occurs when media is ready for playback.
Deactivate	Browser	The player should prepare for destruction.
Change source	Browser	Change media source.
Buffer Empty	Player	Playback cannot continue due to media delivery problems.
Buffer Full	Player	Delivery problems have been resolved and playback can continue.
Sync lost	Peer	Media playback time is out of sync with the peer time.
Sync recovered	Peer	Media playback time is in sync with the peer time.
Playback commands (Play, Stop, Pause, Resume, Seek)	Browser	Except for Seek, all these commands have essentially no effect on the peer state and are passed through to the player. The commands may be defined as follows: Play, start playback; Stop, finish playback; Pause, temporarily suspend playback; Resume, resume suspended playback and Seek, jump to another time offset in the playback.

Figure 6

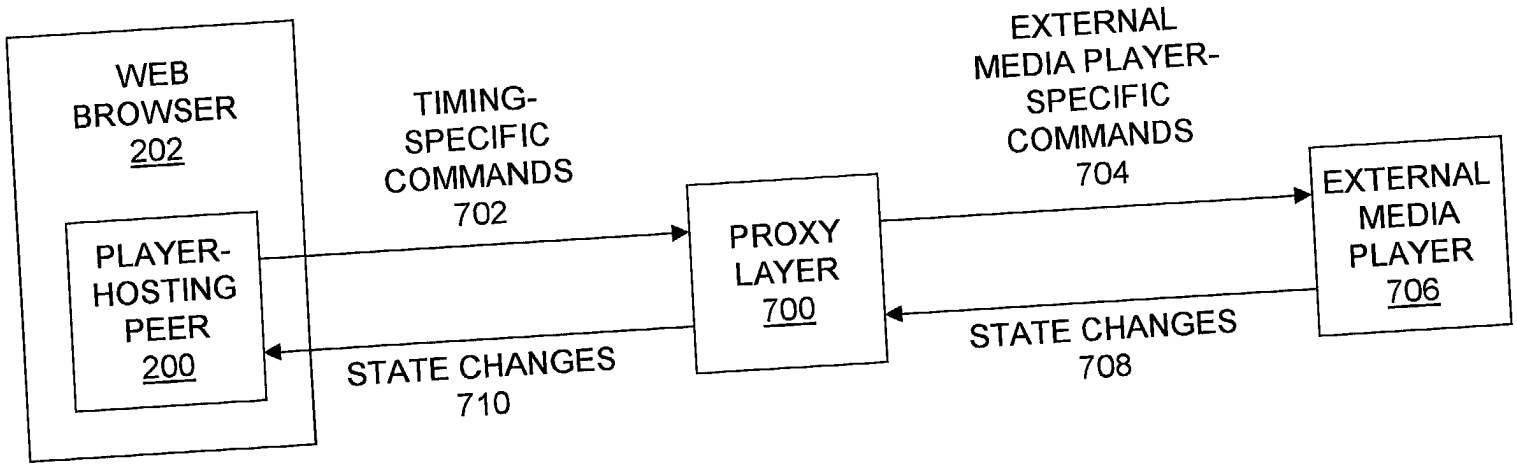
WEB
BROWSER
202
PLAYER-
HOSTING
PEER
200
TIMING-
SPECIFIC
COMMANDS
702
STATE CHANGES
710
PROXY
LAYER
700
EXTERNAL
MEDIA PLAYER-
SPECIFIC
COMMANDS
704
STATE CHANGES
708
EXTERNAL
MEDIA
PLAYER
706

FIGURE 7